

1.42

Soy Sr

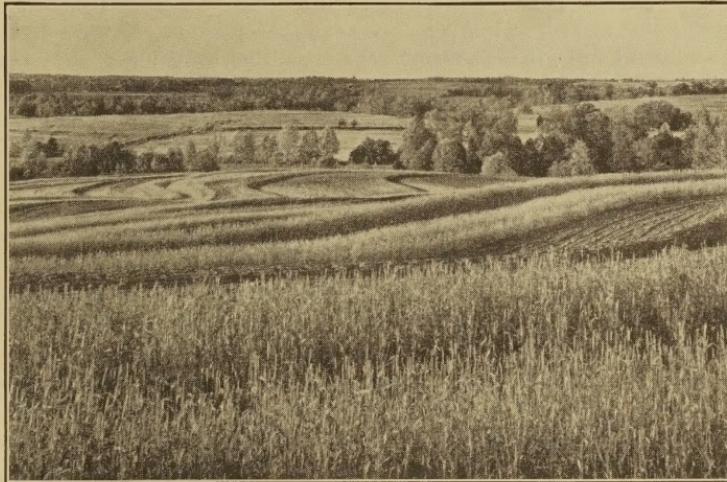
Cop 3

SRAC-No. 6

December 1939

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL ADJUSTMENT ADMINISTRATION
SOUTHERN DIVISION

**CONSERVING SOIL
THROUGH THE FARM PROGRAM**
(Questions and Answers)



This type of cropping will help in preventing soil losses

For use in the States of Alabama, Arkansas, Florida,
Georgia, Louisiana, Mississippi, Oklahoma,
South Carolina, and Texas

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON: 1939



Conserving Soil Through the Farm Program

Long before the AAA farm program was launched, Southern farmers knew that their land was gradually getting poorer. Most of them knew that this was caused largely by soil erosion and a "one-crop" system of farming.

These things they learned through experience on the land and through the various agricultural agencies which work with farmers.

Despite the fact that they knew what was wrong, comparatively few Southern farmers had been able to do much to save their soil for the simple reason that they did not have the money. It takes money to seed pastures, to plant legumes and trees, and to protect soil against erosion by wind or water. In the low-income South, few farmers had the out-of-pocket cash required to carry out these needed soil-building practices.

That's where the Agricultural Conservation Program comes in, with its system of cash payments to help farmers put into effect the soil-building practices they have long needed and wanted on their farms. The soil-building assistance made available to each farm is designed to help the individual farmer carry out practices which he could not otherwise put into effect.

The payments are merely a means to an end. They are a cash help, of course, but the real benefit will come in increased productivity through conservation and improvement of the soil.

The Nation as a whole is interested in saving the soil. The future welfare of all the people depends to a very great extent upon maintaining and increasing the productivity of the soil. Unless the great waste of soil is stopped, all of the people will suffer. It is for these reasons that the Government is helping farmers, by payments under a national program, to do by cooperation among themselves and with their Government what they have been unable to do alone. In this way we are beginning to conserve and improve the greatest natural resource of our Nation—the soil. The farm program is designed to and should make the soil better for the generations to come.

Some of the opportunities offered by the Agricultural Conservation Program for improving soil in the Southern Region are outlined in this leaflet. Information in this publication on soil losses from erosion was furnished by the Soil Conservation Service, United States Department of Agriculture.

The Need for Conservation

Q. Why is it especially necessary for the South to practice conservation measures?

A. (1) The South's chief cash crops are cotton, wheat, tobacco, and corn. All of these except wheat are intertilled crops—planted and cultivated in rows—and the soil is generally left loose and bare of other vegetation. Intertilled crops occupy a larger percentage of the cropland in the South than in most other areas. The topsoil washes away much more quickly on land in row crops than from land planted to thick-growing crops such as lespedeza or vetch.



FIGURE 1.—*Keep nature from doing this to cropland.*

(2) The South has been damaged more by erosion than any other section of the country. Sixty-one per cent of all the Nation's land that has been badly damaged by erosion is in 13 Southern States. At least 22 million acres of once fertile land in these States has been eroded beyond repair. An area the size of Oklahoma and Alabama combined has been damaged by sheet erosion. In addition, the unproductive sand and gravel washed off the South's eroded land has settled on once fertile valley land and damaged an area equal in size to Maryland.

(3) The rural South is the most densely populated of any major farming area in the Nation. Farmers with so little land are forced to plant a high percentage of it to intertilled cash crops.

(4) There is little organic matter incorporated into the soil from a harvested crop of cotton, corn, or tobacco. Soils low in organic matter do not absorb or hold rainfall as well as soils with larger amounts of organic matter.

(5) More than half of the farmers in the South are tenants or sharecroppers. In order to make as much cash as possible in a single year, these farmers normally devote most of their time and land to intertilled row crops, such as cotton, without regard to the future of the soil.

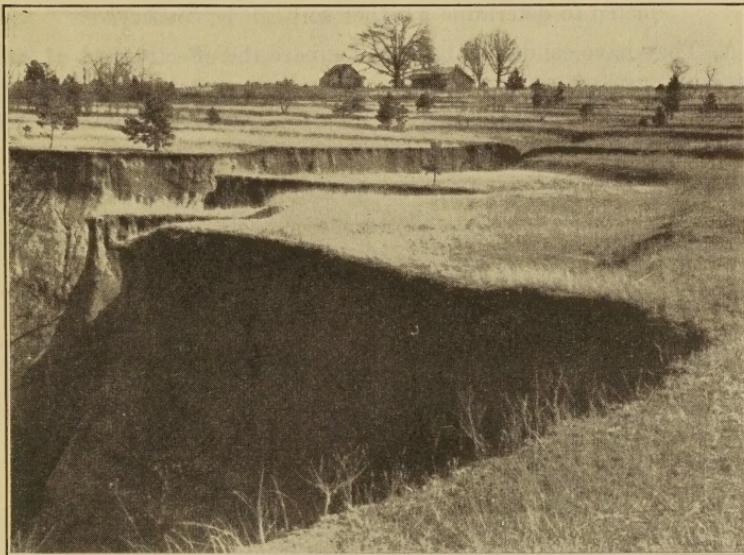


FIGURE 2.—*Lack of corrective measures leads to erosion beyond repair.*

(6) The South has cut away much of her timber, and for this reason severe erosion has resulted in many areas (fig. 5).

(7) Lack of cover has resulted in serious soil losses on the range-land of the Southwest.

(8) The climate of the South causes organic matter to decay in a very short time as compared to the time required in most other sections of the country. The lack of organic matter, clean tillage, lack of winter protection afforded by snow and freezes, and ample rainfall in much of the area make the soils of the South highly susceptible to erosion by water. Where the rainfall is light, the soils are easily eroded by wind. In addition, the South has no generally adapted perennial or biennial legumes, which means that both a winter and a summer cover crop must be planted each year if the soil is to be protected the year round. Seed for most winter cover crops, as well as

for the few perennial and biennal crops that are adapted to limited areas, are usually purchased from outside the region as these crops do not normally produce good seed crops in the South. This annual cash outlay is an added handicap in soil-conservation work in the South. On much of the soil it is difficult to get a satisfactory growth of cover crops without the addition of lime or phosphate, or both.

Soil Can Be Conserved

Q. In general, what kinds of tests have experiment stations conducted to determine whether soil can be conserved?

A. They have conducted tests to compare the effectiveness of various crops, grasses, rotations, and woodlands in preventing erosion and increasing productivity, and to determine the value of terraces and other methods of preventing erosion.

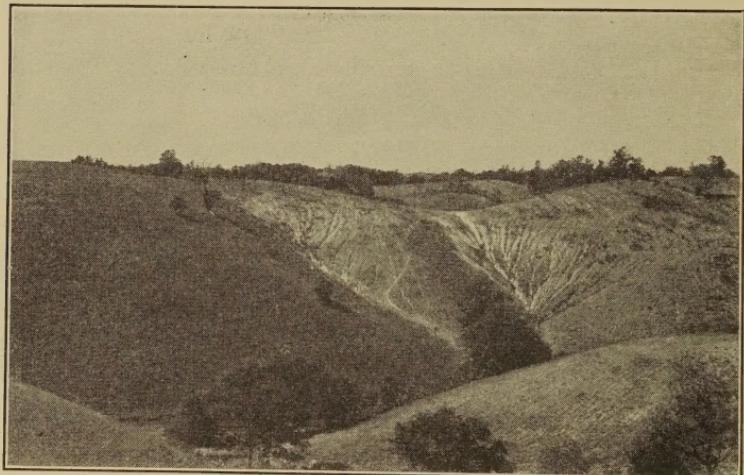


FIGURE 3.—Eroded land contrasted to land on which erosion-control measures have been practiced.

Q. Have experiment stations found that some crops are more effective than others in conserving soil?

A. In 1935, measurements of soil losses by erosion on several areas of similar land in North Carolina showed that land planted to mixed grasses lost 40 pounds of soil per acre; land under lespedeza cover (second year rotation), less than a ton per acre; land planted to corn (rotation), 46 tons per acre; and land planted to cotton (continuous) lost 41 tons per acre.

In a 4-year experiment at Tyler, Tex., land continuously in cotton lost 474 times as much soil as similar land devoted to grass, and 296 times as much as forest land having a much steeper slope.

Q. How do trees, grass, and cotton compare in effectiveness in conserving soil?

A. The following table gives comparative results from two experiments:

TABLE 1.—*Average annual water and soil losses from land under various kinds of cover at Tyler, Tex., 1932-35, and Guthrie, Okla., 1931-35*

TYLER, TEX.—1932-35

Crop	Slope	Rainfall lost as run-off		Soil losses per acre
		Percent	Percent	
Continuous cotton	8.75	22.00		23.72
Bermuda sod	8.75	.86		.05
Woods, virgin	12.50	.59		.08

GUTHRIE, OKLA.—1931-35

Continuous cotton	7.7	14.00	25.640
Bermuda sod	7.7	.90	.029
Woods, virgin	5.2	.20	.017

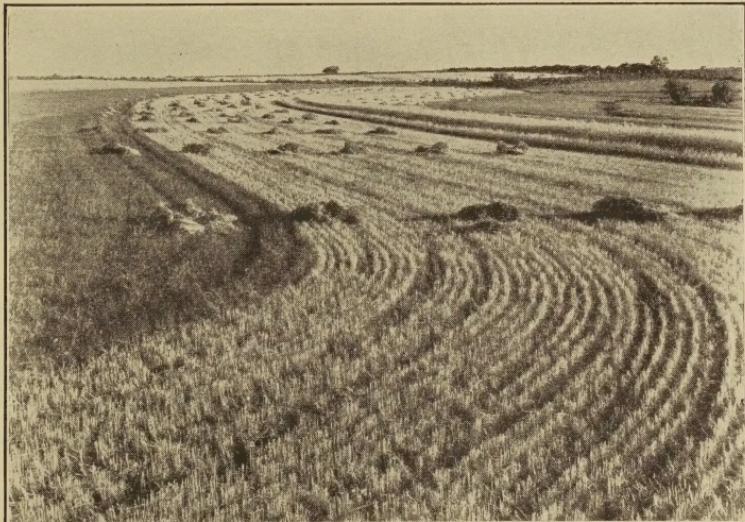


FIGURE 4.—*Strip cropping and contour farming save soil and provide more food and feed.*

In an experiment conducted at Bethany, Mo., one area of grass lost only 9 percent of the snow and rain which fell during a 5-year period of observation; and on an adjacent area with the same slope, but without grass, 31 percent of the snow and rain was lost.

Q. What is the comparative effectiveness of a rotation in conserving soil?

A. At Statesville, N. C.:

	Per acre (tons)
Land planted to cotton continuously lost	24.8
In a 4-year rotation:	
Land planted to cotton following lespedeza lost	14.2
Corn was planted the third year and the soil loss was	20.8
Wheat followed corn and the loss was	7.8
Lespedeza, when it occupied the land, held the soil loss to less than	1.0



FIGURE 5.—*Trees will stop the destruction.*

Opportunities Offered by the Agricultural Conservation Program for Conserving Soil

Q. What features of the Agricultural Conservation Program assist in conserving and improving soil?

A. There are two principal features, namely: (1) The release of land from soil-depleting crops, and (2) assistance in carrying out soil-building practices.

Q. About how much land has been released under the program from soil-depleting crops for market?

A. This varies from year to year, but the year 1938 is typical. In that year the acreage planted to cotton, wheat, tobacco, peanuts, and rice in the nine States of the Southern Region was 13 million acres below the average acreage planted during 1928-32. In table 2, page 9, the 5-year average acreage diverted from cotton is shown by States.

Q. How does the release of land from soil-depleting crops aid in soil conservation?

A. The release of land from soil-depleting crops on nearly every farm of the South has given practically every farmer of this area an opportunity to use a reasonable part of his land for soil-conserving crops and for soil-building practices.

Q. What kinds of soil-building practices does the Agricultural Conservation Program assist in carrying out?

A. In general, there are four kinds, namely: (1) Planting or growing of specified soil-conserving crops, including grasses, and planting trees (fig. 5); (2) applying fertilizers and lime to specified soil-conserving crops; (3) constructing terraces and other mechanical practices; and (4) carrying out various miscellaneous soil-building practices, such as the use of green-manure crops and strip cropping (fig. 4).

Each of these practices meets one or more of the following soil-building needs: (1) Adding organic matter and nitrogen to the soil; (2) providing plant food and lime to correct soil acidity in order to increase the growth of crops that conserve or improve the soil; and (3) checking the flow of water and conserving moisture. In addition, many of the practices provide food or feed.

Q. What assistance other than cash does the Agricultural Adjustment Administration offer in making it convenient for farmers to get materials needed in carrying out these practices?

A. If the amount of materials desired by farmers in a county is large enough to justify making such services available, and it is feasible to do so, the A. A. A. will furnish to cooperating farmers seeds, trees, fertilizers, and other materials that are needed for carrying out approved soil-building practices. These materials are supplied in place of cash payments for soil-building practices. The producer gets the materials when needed and they are charged against his soil-building payments.

Q. How does the out-of-pocket cost of carrying out soil-building practices usually compare with available assistance?

A. The cash cost of carrying out the various practices usually exceeds the assistance that is available. However, many good soil-building practices require almost no direct cash outlay, but may be carried out mainly by the use of labor, teams, and tools already available to the farmer. If the cash assistance under the program is used only to pay for that which cannot be done on the farm with available labor or materials, it will be possible to do soil building far beyond that required to qualify for all of the soil-building assistance available to the farm.

Q. What are some contributions the Agricultural Conservation Program has made to a more permanent agriculture?

A. Soil-building practices carried out under the program provide a way of reducing soil erosion and maintaining soil fertility. These two items are important in getting greater efficiency and more consistent yields.

The reduction in the acreage planted to cotton and other soil-depleting crops has been accompanied by a large increase in the acreage of soil-conserving crops. Last year the acreage of soil-conserving crops in the Cotton Belt was five times as large as in 1930. The acreage planted to Austrian winter peas and vetch in the fall of 1938 was four times as great as such acreage in the fall of 1932. In addition, hundreds of thousands of acres have been protected by carrying out soil-building practices, such as terracing, stripcropping, and contour-farming. As a result of crop diversification, soil improvement, and better seed, the per-acre yield of cotton as well as other crops has increased substantially, thereby lowering the cost of production.

Experimental results and farm records show that yields per acre can be increased (table 3, p. 9). Increased yields help in making it possible to produce enough cash crops for all market demands, to provide more of the food and feed for home farm needs, and to devote more acres to soil-building crops and practices.

TABLE 2.—Cotton: Acreage diverted from production, by States, 1933-34-1937-38

State	1933-34 ¹	1934-35	1935-36	1936-37	1937-38	5-year average, 1933-34-1937-38
Southern region:						
Alabama	810	1, 246	1, 156	941	793	989
Arkansas	928	1, 268	1, 200	807	694	979
Florida	23	42	44	34	22	33
Georgia	695	1, 162	1, 127	895	662	908
Louisiana	454	711	633	444	394	527
Mississippi	935	1, 426	1, 309	966	773	1, 082
Oklahoma	1, 189	1, 218	1, 312	875	763	1, 071
South Carolina	424	693	649	538	393	539
Texas	4, 351	5, 187	5, 177	3, 078	2, 561	4, 071
Total ²	9, 809	12, 953	12, 607	8, 579	7, 055	10, 201
Other cotton States:						
Arizona	22	40	43	42	29	35
California	13	58	74	35	22	40
Missouri	112	139	142	84	63	108
New Mexico	31	42	47	27	17	33
North Carolina	225	483	506	383	320	383
Tennessee	264	381	369	308	255	315
Virginia	10	23	27	17	13	18
Others	3	5	10	7	6	6
Total, all States ²	10, 490	14, 125	13, 826	9, 483	7, 780	11, 141

¹ Acreage plowed up.² Figures do not add to total in all cases, due to rounding.

TABLE 3.—Yields of Cotton and Corn by States of Southern Region, average 1923-32, and annual 1936-38

State	Cotton yields per acre in—				Corn yields per acre in—			
	10-year average, 1923-32	1936	1937	1938	10-year average, 1923-32	1936	1937	1938
		Pounds	Pounds	Pounds		Bushels	Bushels	Bushels
Alabama	172	236	290	251	12. 9	12. 5	14. 5	14. 0
Arkansas	188	249	328	304	16. 3	12. 5	20. 0	16. 5
Florida	125	170	162	163	10. 8	9. 0	10. 0	10. 5
Georgia	176	228	270	203	10. 4	8. 0	11. 5	11. 5
Louisiana	192	260	337	289	14. 4	14. 0	17. 5	16. 5
Mississippi	191	305	377	322	14. 7	14. 5	17. 5	16. 0
Oklahoma	149	162	156	163	16. 6	6. 5	18. 0	20. 0
South Carolina	208	279	289	249	13. 6	13. 5	15. 0	14. 5
Texas	139	121	197	168	16. 8	15. 0	16. 0	16. 0

¹ Drought in 1936.

